

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

Call Authentication Trust Anchor

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)
) WC Docket No. 17-97
)

To: Wireline Competition Bureau

REQUEST FOR EXTENSION

Lumen¹ (“Lumen”), by its undersigned counsel and pursuant to Section 64.6304(e) of the Commission’s rules, 47 C.F.R. § 64.6304(e), hereby requests, out of an abundance of caution, a limited extension of the June 30, 2021 deadline for implementation of the STIR/SHAKEN call authentication framework for Internet Protocol (IP) networks set forth in Section 64.6301(a) of the Commission’s rules.² Lumen fully intends to implement the STIR/SHAKEN authentication framework in its IP networks by June 30, 2021. However, to accommodate the potential for specific equipment-related delays, Lumen requests an additional six months to the extent needed to implement STIR/SHAKEN.³

¹ This request for extension is filed by and on behalf of CenturyLink, Inc. d/b/a Lumen Technologies (“Lumen”) and its subsidiaries.

² Because the Commission’s order adopting these rules was only published in the Federal Register on November 17, 2020, the deadline for extension requests in Section 64.6304(e) is not yet effective. *See* 5 U.S.C. § 553(d); *Call Authentication Trust Anchor*, Second Report and Order, 2020 FCC LEXIS 3888, *254 ¶ 164 (rel. Oct. 1, 2020) (“*Second Report and Order*”) (“this *Second Report and Order* SHALL BE EFFECTIVE 30 days after publication in the *Federal Register*”). Nevertheless, out of an abundance of caution, Lumen submits the instant extension request by the Commission’s intended deadline.

³ In the alternative, Lumen seeks a limited waiver of Section 64.6301(a) of the Commission’s rules pursuant to Section 1.3, which permits the Commission to waive any of its rules “for good cause shown.” 47 C.F.R. § 1.3.

I. BACKGROUND

The Commission has established June 30, 2021, as the deadline for voice service providers to implement STIR/SHAKEN across all portions of their IP networks.⁴ In doing so, the Commission implemented the direction of Congress as expressed in the Pallone-Thune Telephone Robocall Abuse Criminal Enforcement and Deterrence (TRACED) Act.⁵ Both Congress and the Commission recognized “the potential of caller ID authentication to ‘reduc[e] the risk of fraud and ensur[e] that callers be held accountable for their calls.’”⁶

Congress also recognized in the TRACED Act that 100 percent compliance with the June 30, 2021 deadline was unlikely and that in certain circumstances exemptions and extensions were appropriate.⁷ Specifically, Congress directed that extensions of the June 30, 2021 deadline be considered “upon a public finding of undue hardship.”⁸ Congress also anticipated that such extensions may be necessary where “purchasing or upgrading equipment to support call authentication, or the lack of availability of equipment, would constitute a substantial hardship for a provider or category of providers of voice services.”⁹ Congress instructed the Commission to “monitor the pace with which equipment vendors upgrade their products to enable STIR/SHAKEN signing and should consider granting an extension, if consistent with the public

⁴ See *Call Authentication Trust Anchor*, Report and Order and Further Notice of Proposed Rulemaking, 35 FCC Rcd 3241, 3252 ¶ 24 (2020) (“*First Report and Order*”).

⁵ See Pallone-Thune Telephone Robocall Abuse Criminal Enforcement and Deterrence Act, Pub. L. No. 116-105, § 4(b)(1)(A), 133 Stat. 3274, 3277 (2019) (“TRACED Act”).

⁶ *First Report and Order*, 35 FCC Rcd at 3246 ¶ 11 (quoting *Call Authentication Trust Anchor*, Notice of Inquiry, 32 FCC Rcd 5988, 5988 ¶ 1 (2017)).

⁷ TRACED Act §§ 4(b)(2), 4(b)(5)(A)-(B).

⁸ *Id.* § 4(b)(5)(A)(ii); see S. Rep. No. 116-41, at 6 (2019) (“allowing the FCC to extend the deadline in the event of undue hardship”).

⁹ S. Rep. No. 116-41 at 11 (2019).

interest to do so, to any class of service providers whose implementation of STIR/ SHAKEN is hampered by an inability to procure the necessary equipment.”¹⁰

In the *Second Report and Order*, the Commission acknowledged the availability of extensions of the STIR/SHAKEN implementation deadlines in cases of undue hardship.¹¹ The Commission also acknowledged that such hardships could be caused by lack of availability of equipment.¹² Although the Commission declined to extend a blanket extension of the STIR/SHAKEN deadline for equipment availability issues, it affirmatively stated that it would entertain such extension requests on a provider-specific basis.¹³ Indeed, in the *Second Report and Order*, the Commission agreed with Lumen and others that “some providers may face specific circumstances in all or part of their IP networks that constitute undue hardship.”¹⁴

Although Lumen is taking all steps necessary to achieve full implementation of the STIR/SHAKEN authentication framework in its IP networks by June 30, 2021, circumstances may exist that are outside of Lumen’s control that may impede its ability to achieve this goal. At this time Lumen remains on track to meet the June 30, 2021 implementation deadline, however, Lumen’s timeline is vulnerable to equipment-related delays that may arise between now and the implementation deadline. Thus, out of an abundance of caution, Lumen seeks an additional six

¹⁰ *Id.* at 14.

¹¹ *Second Report and Order* ¶ 65; *see also First Report and Order* ¶ 22.

¹² *Second Report and Order* ¶ 57 n. 218 (“We note that under our rules any voice service provider—large or otherwise—that encounters a specific equipment availability issue may request a waiver of the deadline.”); *see also id.* at ¶ 68 (stating that a caller ID authentication protocol is “reasonably available” only if “the underlying equipment and software necessary to implement such protocol is available on the commercial market.”).

¹³ *Id.* at ¶ 57.

¹⁴ *Id.* at ¶ 65.

months to accommodate specific equipment-related delays needed to implement STIR/SHAKEN to the extent these delays arise.

II. LUMEN'S EFFORTS TO IMPLEMENT STIR/SHAKEN

Lumen remains strongly committed to doing its part to combat illegal robocalls and protect consumers from the harm and inconvenience they cause. Widespread deployment of STIR/SHAKEN will curb the effectiveness of illegal spoofing and will assist voice service provider efforts to identify calls with illegally spoofed caller ID information before those calls reach their customers. Lumen has been a leader within the technical standards community since the beginnings of STIR/SHAKEN development. Specifically, Lumen helped to develop the technical industry standards for STIR/SHAKEN through the partnership of the SIP Forum and the Alliance for Telecommunications Industry Solutions (“ATIS”) (also known as the IP-NNI) and is on the Board of Directors of both the SIP Forum and ATIS. In addition, Lumen is among the founders of the Industry Traceback Group (“ITG”), which enables prompt and accurate tracking of illegal calls all the way to their origins.

In 2019, Lumen made important progress preparing for and implementing STIR/SHAKEN, with successful testing and initial transit, termination, and origination of authenticated calls using the new technology.¹⁵ Now, in 2020, the process of testing with multiple service providers and deployment across Lumen’s IP networks is underway and is expanding rapidly. Earlier this year, Lumen agreed to lead the Non-IP Call Authentication Task Force established by the ATIS-SIP Forum which will complement the work already being

¹⁵ See letter from Randy Clarke, Vice President, Federal Regulatory Affairs, CenturyLink, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 17-97 (filed Feb. 28, 2020) (“Lumen Feb. 2020 Update”).

addressed in the IP-NNI Task Force to address challenges with call authentication on TDM networks and identify viable alternatives for TDM call authentication functionality.¹⁶

III. LUMEN'S EXTENSION REQUEST

As Lumen and others have described to the Commission, implementation of STIR/SHAKEN across multiple IP networks is a complex undertaking involving numerous types of network equipment and requiring customized software implementations, hardware modifications and, in some cases, hardware replacements to work together seamlessly. By virtue of Lumen's history of acquisitions, it now operates several discrete networks, each of which poses unique implementation issues. Lumen anticipates that it will be capable of implementing STIR/SHAKEN across Lumen's IP networks by June 30, 2021. History and Lumen's own experience has demonstrated, however, that vendors responsible for developing the software Lumen relies on frequently miss deadlines, software testing can reveal bugs that take longer than expected to fix, and even properly tested software can fail to operate properly when loaded into network equipment that turns out to lack compatibility with STIR/SHAKEN technology, delaying implementation in such equipment.¹⁷ Such vendor delays and equipment compatibility issues are precisely the type of undue hardship that both Congress and the Commission recognized warrants an extension of time to implement STIR/SHAKEN in affected equipment until compatibility issues can be resolved, so long as the provider is diligently working towards a solution and has implemented an appropriate robocall mitigation program for impacted traffic.¹⁸

¹⁶ ATIS, IP-NNI Task Force, <https://www.atis.org/industry-collaboration/ip-nni-task-force/> (last visited Nov. 17, 2020).

¹⁷ *See generally* Lumen Feb. 2020 Update.

¹⁸ *See* Reply Comments of CenturyLink, WC Docket No. 17-97, at 14 (May 29, 2020). *See* TRACED Act § 4(b)(5)(A)(i)(III) (directing the Commission to assess burdens or barriers including "inability to purchase or upgrade equipment to support the call authentication

Lumen has been engaged with its vendor on STIR/SHAKEN software development since March 2018, and since June 2019 has been engaged in the iterative process of testing that is required for Lumen to ensure that the software provided by its equipment vendor to implement STIR/SHAKEN meets the relevant ATIS standards and Lumen network architecture requirements. Through the regression and conformance testing that is part of this iterative testing process, Lumen has discovered several bugs specifically related to STIR/SHAKEN technology that have required multiple custom software updates to remedy.¹⁹ While Lumen has performed regression testing after each software update, and is currently performing regression testing on its latest software update, regression testing has inherent limitations that prevent it from perfectly simulating performance in the production environment. Because of these limitations, thorough testing is necessary to minimize the risk of introducing bugs as software is moved from the testing environment into production.

Further, each of Lumen’s discrete networks require testing and resolution of issues such as software bugs in order to fully implement STIR/SHAKEN and ensure that the software operates as intended in the various forms of hardware that are present in Lumen’s networks.²⁰

frameworks . . . or lack of availability of such equipment.”); *Second Report and Order* n. 218. *See also* S. Rep. No 116-41 at 11 (2019) (“purchasing or upgrading equipment to support call authentication, or the lack of availability of equipment, would constitute a substantial hardship for a provider or category of providers of voice services.”); letter from Joshua Bercu, Vice President, Policy and Advocacy, USTelecom, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 17-97 at 7 (filed Sept. 18, 2020) (requesting that the FCC clarify that a provider is not precluded from seeking a provider-specific extension based on equipment availability issues that arise in the future); Reply Comments of CenturyLink, WC Docket No. 17-97, at 14 (May 29, 2020).

¹⁹ *See* Lumen Feb. 2020 Update at 2.

²⁰ *See First Report and Order*, 35 FCC Rcd at 3258-59 ¶ 36 (defining “STIR/SHAKEN authentication framework” to mean adherence to “three ATIS standards that are the foundation of STIR/SHAKEN—ATIS-100074, ATIS 1000080, and ATIS-1000084—and all documents referenced therein.”). The Commission also recognized that “to the extent a certain calling case

Unlike legacy TDM networks, vendor software development such as STIR/SHAKEN, is not generally designed to be backwards-compatible on IP hardware and service providers must test previous models of hardware to ensure compatibility with the STIR/SHAKEN software. In the event of incompatibility, network equipment may need to be replaced. While issues such as these are uncommon, they have occurred in the past, and if history repeats itself, Lumen risks not fully meeting the June 30, 2021 deadline.

Notwithstanding these challenges, Lumen fully intends to implement the STIR/SHAKEN authentication framework in its Internet Protocol networks by June 30, 2021 and is on track to meet that deadline. Lumen cannot, however, control vendor delays, software bugs, or unexpected hardware compatibility issues, any or all of which may be unique to Lumen. This extension request is needed only so that Lumen can accommodate any such specific equipment-related potential delays to the extent needed to implement STIR/SHAKEN.

IV. ROBOCALL MITIGATION PROGRAM

As required by the TRACED Act, Lumen will have in place a robust robocall mitigation program for the duration of the requested extension.²¹ Lumen's mitigation program will include detailed practices that can reasonably be expected to significantly reduce the origination of

is not accounted for by industry standards, application of caller ID authentication is not called for by our rules." *Second Report and Order* at ¶ 156; *see also* S. Rep. 116-41 at 14 (2019) ("In its initial form, STIR/SHAKEN may not function properly with certain calling technologies and in certain scenarios, such as outbound-only calling technologies where the service provider does not assign individual telephone numbers to outbound callers.... If such a standard is not readily available but development is proceeding in a reasonable and timely manner, the Commission may consider the lack of an industry-standard approach to signing that would permit these companies to obtain highest level attestation for their outbound calls to present a substantial hardship...."). There may be use cases within these standards that are not adequately developed such that signed calls will be able to be consistently verified.

²¹ TRACED Act § 4(b)(5)(C).

illegal robocalls, and Lumen will comply with the practices it describes.²² In fact, many of the elements of such a program are in place today. Lumen also commits to continuing to cooperate with the Commission, law enforcement, and the industry traceback consortium in investigating and stopping any illegal robocallers that it learns are using its service to originate calls.²³

V. CONCLUSION

Lumen is committed to the goal of full STIR/SHAKEN deployment across its IP networks by June 30, 2021 and is devoting significant resources to achieve that goal. Lumen's experience has highlighted how software releases and associated testing is an iterative process with interdependencies that cannot always be anticipated in advance. These interdependencies have the potential to impact Lumen's deployment timeline, particularly if additional software must be developed and tested, or if network equipment must be replaced to resolve the implementation issues that are discovered. For those specific equipment-related potential delays described herein, Lumen respectfully requests up to a six month extension of the June 30, 2021 implementation deadline.

Respectfully submitted,

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²² *Second Report and Order* at ¶ 78.

²³ *Id.* at ¶ 79.